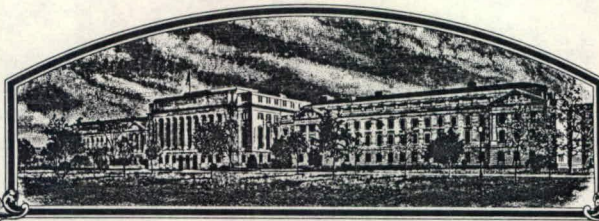


No.

8300160



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

John Bodger & Sons Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT OF MARCH 19, 1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

MARIGOLD

'Pineapple Crush Improved'



Attest:

Kenneth H. Ware
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 30th day of November in the year of our Lord one thousand nine hundred and eighty-four.

John R. Block
Secretary of Agriculture




1923

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

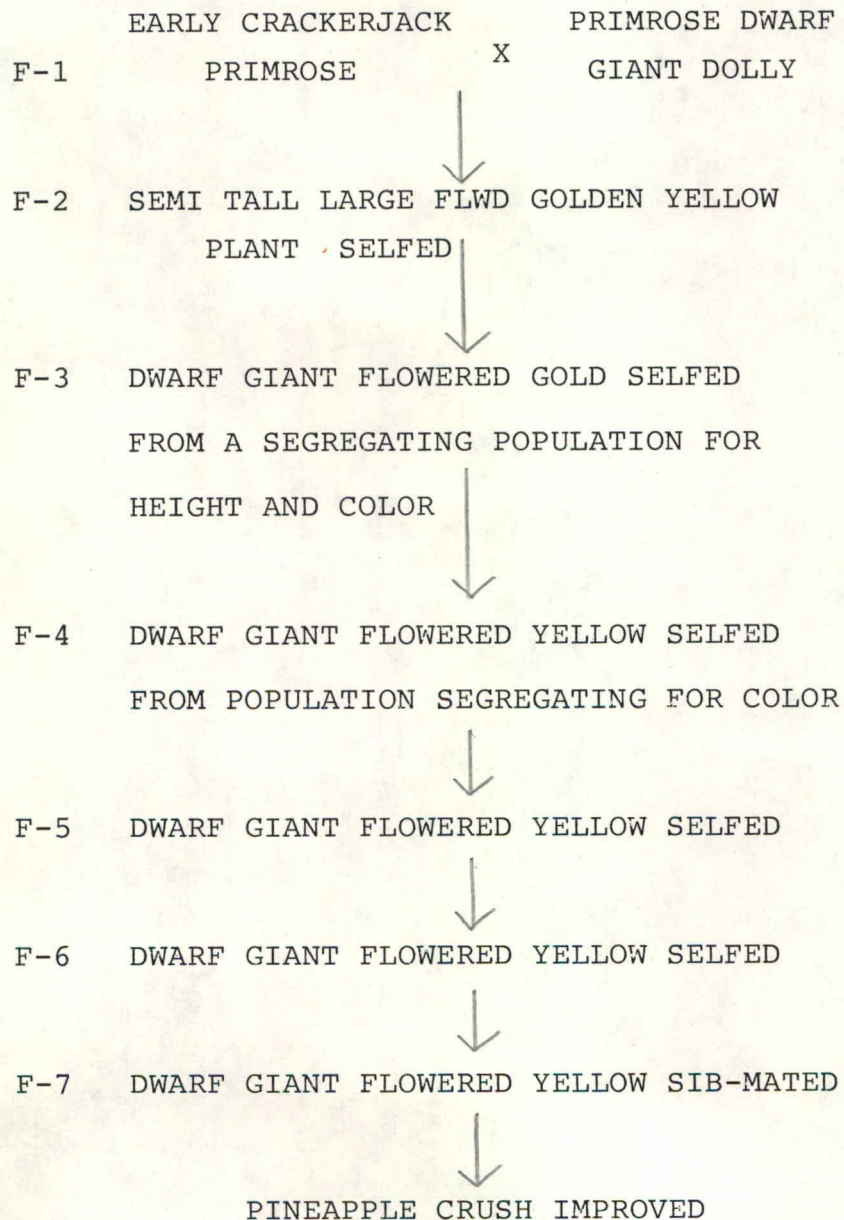
1. NAME OF APPLICANT(S) JOHN BODGER & SONS CO.		2. TEMPORARY DESIGNATION na		3. VARIETY NAME Pineapple Crush Improved	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P.O. Box 5090 El Monte California 91734		5. PHONE (Include area code) 213-442-6161		FOR OFFICIAL USE ONLY PVPO NUMBER 8300160	
6. GENUS AND SPECIES NAME Tagetes erecta		7. FAMILY NAME (Botanical) compositae		FILING DATE 7/28/83 TIME 8:30 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
8. KIND NAME Marigold		9. DATE OF DETERMINATION 8-1-81		FEES RECEIVED AMOUNT FOR FILING \$ 1,000 DATE 7/28/83 AMOUNT FOR CERTIFICATE \$ 500.00 DATE 10/29/84	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				12. DATE OF INCORPORATION February 7, 1912	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION California					
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Howard Bodger P.O. Box 5090 El Monte, California 91734					
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> Yes <input type="checkbox"/> No			17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input type="checkbox"/> Certified		
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No					
19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No					
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT JOHN BODGER & SONS CO. PRESIDENT				DATE July 13, 1983	
SIGNATURE OF APPLICANT 				DATE 1	

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14 A (1)



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- (2) After the initial sib-mating to increase the seed for planting the seed was increased in the field by bulking seed harvested from open pollinated plants. Off types such as off colors and taller plants were removed from the field before they could shed pollen.
- (3) The main variants observed during reproduction and multiplication were off colors, slightly taller plants, smaller flowers and single flowered plants all of which occurred at a frequency of less than .01%.
- (4) In a production field of over 60,000 plants to provide seed for sale off types appeared at a frequency of less than .01%.

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14 B)

Novelty of Pineapple Crush Improved is based on the variety being less responsive to long days thus it will bloom earlier and more profusely under long days than Pineapple Crush as is demonstrated in Figure 1. Days to bloom from seeding will vary depending on seeding date. When Pineapple Crush Improved is sown under short day conditions it is approximately 4 days earlier to bloom than Pineapple Crush. However, when seeded under long day conditions there is an approximate 10 days difference in bloom between Pineapple Crush Improved and Pineapple Crush. Flower color is also different as Pineapple Crush is 4B according to the Royal Horticultural Society Color Chart compared to 3A for Pineapple Crush Improved.

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OBJECTIVE DESCRIPTION OF VARIETY
MARIGOLD (TAGETE)

INSTRUCTIONS - See Reverse.

NAME OF APPLICANT(S)

JOHN BODGER & SONS COMPANY
ADDRESS (Street and No., or R.F.D. No.; City, State, and ZIP Code)
P.O. Box 5090
El Monte, California 91734

FOR OFFICIAL USE ONLY

PVPO NUMBER 8300160

VARIETY NAME OR TEMPORARY DESIGNATION

PINEAPPLE CRUSH IMPROVED

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (e.g., 01819 or 0181) when number is either 99 or less or 9 or less.

1. SPECIES TYPE:

1 = ERECTA (African) 2 = PATULA (French) 3 = TENUIFOLIA (Signata) 4 = LUCIDA (Sweet)
5 = OTHER (Specify) _____

2. PLOIDY:

1 = DIPLOID (n = 12) 2 = TRIPLOID (n = _____) 3 = TETRAPLOID (n = _____)

3. PLANT TYPE/HABIT:

1 = EXTRA DWARF (Miniature, petite) < 20 CM. 2 = DWARF 25-35 CM. 3 = SEMIDWARF 40-55 CM. 4 = TALL > 60 CM.
1 = ERECT 2 = SEMIERECT 3 = DECUMBENT
1 = COMPACT 2 = LAX
2 = Flowering: 1 = LONG SEASON 2 = SHORT SEASON

4. LEAF (Middle of first flowering branch):

1 Type: 1 = SIMPLE 2 = COMPOUND
2 Leaflet: 1 = OVATE 2 = LANCEOLATE 3 = ELLIPTIC 4 = FILIFORM
3 Margin: 1 = ENTIRE 2 = CRENATE 3 = SERRATE 4 = DENTATE 5 = INCISED
1 5 5 CM. LONG 1 0 MM. WIDE 1 Anthocyanin pigment in petioles: 1 = ABSENT 2 = PRESENT
1 Glands: 1 = PUNCTATE 2 = LARGE DOTS 1 Glands: 1 = BASAL 2 = APICAL
5 Odor: 1 = NONE 2 = MILD FRAGRANCE 3 = STRONG FRAGRANCE 4 = MILD "MARIGOLD" 5 = STRONG "MARIGOLD"

5. STEM:

1 1 = STRAIGHT 2 = ZIGZAG 1 1 = BRITTLE 2 = FLEXIBLE
1 Anthocyanin: 1 = ABSENT 2 = ALONG VEINS ONLY 1 5 CM. FROM BASE OF STEM TO INVOLUCRE OF TERMINAL FLOWER
3 = SOLID COLORATION
9 5 CM. FROM BASE OF MAIN STEM TO AXIL OF TOP BRANCH 5 5 CM. FROM AXIL OF TOP BRANCH TO INVOLUCRE OF TERMINAL FLOWER
0 7 NO. OF INTERNODES BELOW FIRST BRANCH 1 6 NO. OF FIRST ORDER BRANCHES (from main stem)

6. FLOWER:

1 Type: 1 = CARNATION 2 = CHRYSANTHEMUM 3 = OTHER _____
2 1 = SINGLES 2 = DOUBLES
1 Silhouette: 1 = FLATTENED 2 = ROSETTE 3 = GLOBULAR
2 Odor: 1 = NONE 2 = MILD FRAGRANCE 3 = STRONG FRAGRANCE 4 = MILD "MARIGOLD" 5 = STRONG "MARIGOLD"

6. FLOWER: (Continued)

☐ 1 Ray: 1 = FLATTENED 2 = CURLED/TWISTED (*Fantastic*)
☐ 1 Apices: 1 = ENTIRE 2 = LOBED 3 = NOTCHED
☐ 1 SURFACE - Dorsal: }
☐ 1 SURFACE - Ventral: } 1 = GLABROUS 2 = PUBESCENT 3 = PUBESCENT ON APICE ONLY
☐ 2 LUSTER - Dorsal: }
☐ 2 LUSTER - Ventral: } 1 = SHINY 2 = DULL
☐ 1 PATTERN - Dorsal: } 1 = SOLID 2 = SPOTTED 3 = STRIPED
☐ 1 PATTERN - Ventral: } 4 = PICOTEE 5 = OTHER (*Specify*) _____
☐ 1 Color: 1 = SOLID 2 = BICOLOR (*Specify colors*): Primary yellow 3A Secondary na
 State color standards used: RHS Color Chart

SIZE (Use outer row of first matured flower): 3 5 MM. LONG 3 0 MM. WIDE

☐ 3 Disc: 1 = ABSENT 2 = PRESENT, COVERED 3 = PRESENT, UNCOVERED
☐ 1 Type: 1 = NOT QUILLED 2 = QUILLED

7. DISEASE RESISTANCE (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ 0 ROOT-ROT (*Phytophthora*) ☐ 0 VIRUS YELLOWS
☐ 0 GREY MOLD (*Botrytis*) ☐ 0 FUSARIUM WILT
☐ 0 STEM ROT (*Sclerotinia*) ☐ 0 WITCHES BROOM

8. INDICATE A VARIETY THAT MOST NEARLY RESEMBLE THAT SUBMITTED

CHARACTER	VARIETY	CHARACTER	VARIETY
Plant shape	Pineapple Crush	Flower size	Pineapple Crush
Plant size	Pineapple Crush	Flower shape	Pineapple Crush
Foliage	Pineapple Crush	Flower color	Pineapple Crush

INSTRUCTIONS

REFERENCES: The following publications may be used as a reference aid for completing this form:

- (a) Bailey, L. H., 1949, Manual of Cultivated Plants, MacMillan.
- (b) Royal Horticulture Society, 1965, Dictionary of Gardening, Oxford.
- (c) Wyman, Donald, 1971, Wyman's Gardening Encyclopedia, MacMillan.

COLOR: Nickerson's or any recognized color fan may be used to determine the colors.

14D)

Although Pineapple Crush Improved closely resembles Pineapple Crush in overall appearance there are several differences. Figure 2 demonstrates that not only did Pineapple Crush Improved bloom earlier from a February 23 sowing date which is under short day conditions, but it was also more uniform to bloom than Pineapple Crush. Pineapple Crush Improved is also more compact as from an early June sowing Pineapple Crush was 18.5 cm tall from the soil line to the base of the first flower while Pineapple Crush Improved was only 15 cm tall. Flower size, flower shape and foliage are similar for both varieties as demonstrated by the enclosed silhouettes.

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Figure 1: Marigold Pineapple Crush (left) and Marigold Pineapple Crush Improved (right) illustrating flowering response under long day conditions.

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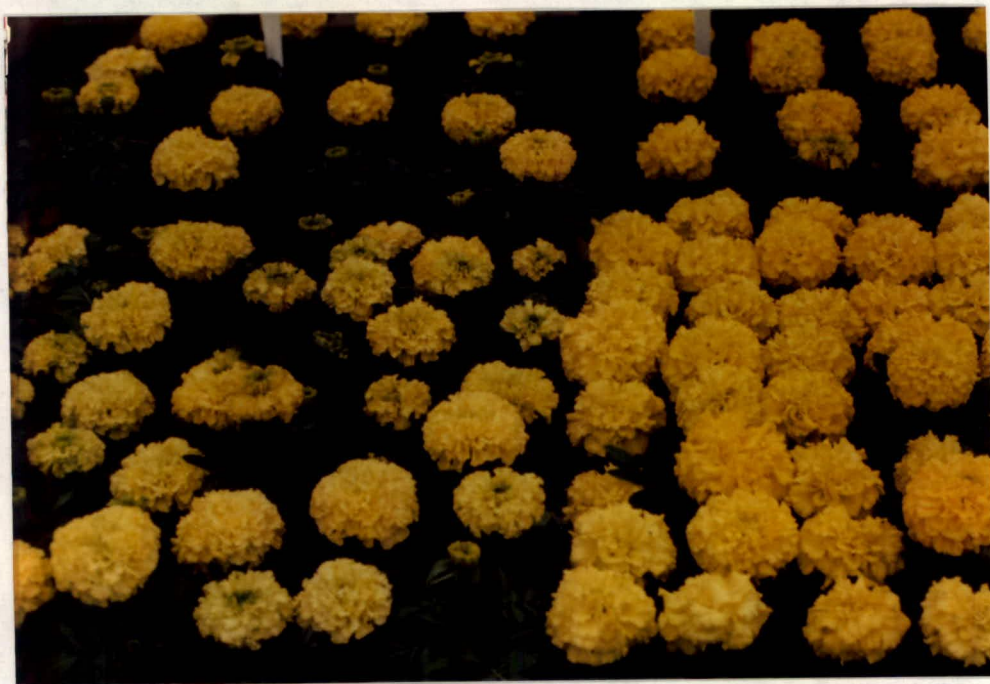


Figure 2: Marigold Pineapple Crush (left) and Marigold Pineapple Crush Improved (right) illustrating uniformity of flowering in cell packs under greenhouse conditions.

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MARIGOLD PINEAPPLE CRUSH IMPROVED

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MARIGOLD PINEAPPLE CRUSH

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